

**Dr. Nehal Ahmed Mahmoud El Defrawy**

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**The role of Sociology in improving the education of food applications' designers and developers to reduce food loss "Applied analytical study on some Arab Food delivery applications".**

**Dr. Nehal Ahmed Mahmoud El Defrawy**

PhD "Doctor of Philosophy degree for preparing teacher in Arts

"Specialization in Sociology

“University Lecturer and curriculum developer”

**Research Abstract**

The subject of the research is about the importance of stakeholder's education for human social food behaviour through sociology. Recently, many stakeholders appeared behind food delivery applications in Arab countries which can support society to reduce food loss.

The research's objective is to recognize the role of sociology in stakeholders' education, who design and develop delivery food applications to minimize food loss.

The research will answer the main question:” What is the background of sociology for the designers and developers of the food delivery applications, that form their ideologies about the relationship between social behavior and food loss?”.

The research methodology is a descriptive analytical meta-study based on description, critique and the study of the data related to the content and the descriptive analytical method by using content analysis tool.

The current research attempted to analyse the content by download five IOS food delivery applications, which are (Talabat, Macdonald's Egypt, KFC Egypt, MAF Carrefour, InstaShop), that directly measure the awareness of applications' designers about sociology and food loss problematic. That lead to achieve research objectives by recognizing the role of sociology in creating the ideology of food applications' designers and developers, and if they have the proper knowledge about how to use sociology to stop food loss.

**The role of Sociology in improving the education of food applications' designers and developers to reduce food loss "Applied analytical study on some Arab Food delivery applications"**

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The main results show that the education of food applications developers didn't add any value to stop food loss. The research found that food applications didn't include sharp information about food amount or nutrition guide, or any valuable info to support saving food.

According to research results, the researcher set recommendations to improve the education of designers and developers of food applications, to gain more knowledge about sociology and to increase their awareness of food loss problematic. All of this should be considered when designing their applications to support food savings.

**Keywords:**

Education, Food application, Food application developers, Food loss, Food social behaviors, Sociology, Stakeholders.

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**Introduction:**

The subject of the research is about the importance of stakeholder's education for human social food behaviour through sociology. Recently, many stakeholders appeared behind food delivery applications in Arab countries which can support society to reduce food loss.

Many of applications' designers and developers have a major role to produce any application, they are the ones who create all the data which provided to customers through the application, food delivery customers are big range of society. According to iOS App store in September 2022 there are more than 300 free food and drinks applications in Egypt with more than 20 million customers.

It is very important to know the ideologies of food applications' designers and developers and their knowledge about food loss problematic and the level of their awareness about people behaviours that increase food loss. One of the major benefits from studying sociology is to raise people awareness about social problems and human behaviours.

Sociology will play a critical role in designers and developers' education to set their ideologies that will support stopping food loss and increasing their knowledge about sustainability in general.

The scientific significance comes from the spreading of food apps and their customers that can play an excellent role to support stopping food loss and supporting the transition required to achieve global goals such as the Paris Agreement, the Kyoto Protocol, the United Nations Framework Convention on Climate Change, the

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European Green Agreement, and to achieve United Nations Sustainable Development Goals 12.3 as part of the 2030 Sustainable Development Goals.

**Sociology and Education:**

▪ **Theories of Ideology and sociology:**

There were many theories of ideology in sociology. "Wieviorka" defines ideology as a general and comprehensive view that involves political beliefs. Its presence in sociology is clearly indicated as sociologists, no matter what sociologists say; they are portrayed as ideologists by others. On the other hand, ideology unlike sociology; its formulation is the work of intellectuals. (Eliezer Ben-Rafael. 2003).

Durkheim (1979 [1912], p. 624) wrote in his book *Elementary Forms of Religious Life* that in the first stage the idea is often accepted by most individuals because it is collectively accepted, while in the second stage it is accepted collectively and accepted only if it is considered to exist On Objective Grounds: "We examine its claims to be objectively grounded before we believe in it". Cultural relativism must be distinguished from cognitive relativism from several points of view. Epistemological relativism is a collective belief according to the new sociologists of science. Their influence at present is limited to very limited circles. By contrast, cultural relativism is more influential as it has become an accepted idea spread among the intelligentsia, but it is less influential in the public. Despite these differences between the two forms of relativity, it is important to see that they have common features. (Eliezer Ben-Rafael. 2003)

From reading deferent theories of sociology and ideology we will find that the primary goal of any ideology is not to understand or explain society, but to change it by acting politically on it. Sociology as a discipline that does not have any definite political agenda, but an ideology that does not have any such ideology would

not deserve that name. Ideologies constitute the operating principles for managing society. Examples of ideologies include liberal, conservative, socialist, communist, theocracy, agrarian, totalitarian, democratic, colonial, and globalist. They provide explanations for the facts and problems of social life, enabling individuals and groups to orient themselves in society.

▪ **The Social construction of the curriculum:**

When we talk about the social construction of the curriculum in general, we'll find that a curriculum ought to be derived from directed toward social system takes on a large kind of forms, several of that conflict with one another.

Particularly common and powerful within the post-war time was the "technical-functional" read that school education curriculums ought to be joined to the developing desires of the economy. This is often not simply to be done, however includes intricate accounts of social modification underneath such titles as "Advance Industrial Society", "Post-Industrial Society", "Post-Fordist Society", etc. On the far side that these theories argue that society is undergoing some forceful modification involving a clear stage with the past, necessitating a significant revision of faculty information and therefore the education system. Most major education reports begin with a situation of this sort. Such accounts are typically ceremonial; however, versions typically describe modification in terms of regression and back to basics, describing society in terms of power, inequality, oppression, and support to program modification as how to correct these relationships for instance inclusion sustainability and sociology topics in designers and developers' educational programs and curriculums. (Rob Moore,2007)

The Social construction of sociology curriculum shares the essential principle of explaining curricula in terms of a comprehensive understanding of societies issues including food lose problematic.

**The role of Sociology in improving the education of food applications' designers and developers to reduce food loss "Applied analytical study on some Arab Food delivery applications"**

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**Sociology, Education and Food loss:**

- **Stopping food loss towards sustainable future through education:**

Building a sustainable future is one of the biggest challenges we face as humankind. This is often made more difficult by the indifference of many to the need for sustainability. Education will play a critical role in finding a solution to the global climate crisis, by shaping conscious and preparing the future generations to take the necessary action.

The value of higher education institutions is to be a role model by including the sustainability topics through the education system. It is well anchored in the curriculum, as well as in daily practices and lifestyles. It is very important to learn from different societies their own experience of integrating sustainability into their curricula, and teaching sustainability to students. (Enakshi Sengupta and Others,2020).

By exploring the idea that education and sustainability should be seen as intrinsically linked if we are to see global change, this kind of knowledge is very important to leaders, scholars, and policy professionals in higher education.

- **The role of sociology in Food loss problematic:**

The role of sociology is not only to add knowledge, but sociology also play a leading role in the development of society, and support people to participate as active members of their local communities. Studying sociology provides sustainable value for people and transforming social responsibility to be one of their primary focuses and their interaction with society to advance their values.

Sociology is interested in Food loss problematic as one of major topic that related to sustainability. With global inequalities becoming increasingly visible, ingredient costs rising, and global warming a major policy issue, food producers must now address environmental concerns, social responsibility and economic

feasibility when designing their food processing technologies for the future. Sustainable food processing is about finding new ways to meet current needs without including future viability, given the ever-changing economic and environmental conditions. This is not just an issue of corporate social responsibility, but is directly related to efficiency, cost savings and profitability, and thus the food industry must increasingly embrace sustainable food processing to achieve success. Sociology provides a comprehensive overview of both economic sustainability and environmental concerns related to food processing. It promotes ways to increase sustainability in all major sectors of the food industry. (Brijesh K. and Nicholas M.,2013).

Sociology must be of great interest to academic and industrial professionals. some of sociology topics that increase sustainability knowledge, the concept, and principles of sustainable food manufacturing, with reference to the different food processing sectors plus fermentation, cold chain, consumption, and packaging provide a comprehensive guide to making these key processes more sustainable. Issues such as cleaning, sanitation, carbon, footprint, energy, and water consumption in the food industry address economic sustainability. Environmental impact assessment and food processing, waste use, risk assessment, regulatory and legislative issues are also addressed, as sociologist provide information and industry-relevant perspectives on these topics.

**Food Applications (food Apps):**

The idea of semi-permanent contact is likely to continue to grow in terms of social gathering. Many new services have become available, and that will be available on popular mobile devices like the Apple iPhone, while some reasonable scientists will see this constant chatter and tweet, as detrimental to the inner reflection that makes life worthwhile, if not unappealing. Strange to any sane human being, it is also possible to see that such activities can indeed form a bulwark against religious or political extremism. The value of multiple loyalties has been shown to be a strong balance with totalitarian ideologies of all scales with mobile communications, a

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new way of having interconnectedness is growing. (Larissa Hjorth and Others 2012). Because of that we can consider food applications as an important tool to spread awareness about food loss problematic.

**Apps Designers and Developers definition:**

Apps developers and designers are a computer software engineers who principal responsibilities include creating, programming, designing, and testing applications for computers, mobile phones, and tablets. These developers work in groups and in teams to think of ideas and concepts for specific customer needs. (Career explorer.com).

According to the good universities guide platform Apps programs can be written for a specific operating mobile system, such as Android or iOS. Apps developers and designers usually specialize in a specific area of development and designing as mobile applications, graphics software and accounting software.

Once the app has been completed, the developer and designer continuously upgrade the released app. App developers and designers can work for themselves as freelancers according to small, medium, and large businesses, building experiences that allow people to complete tasks, consume content, and interact with brands and other people.

**Research Objectives:**

The research's objective is to recognize the role of sociology in stakeholders' education, who design and develop delivery food applications to minimize food loss.

The research will answer the main question:” What is the background of sociology for the designers and developers of the food delivery applications, which form their ideologies about the relationship between social behaviour and food loss?”

The current research revolves around several objectives, which are:

- Recognize the role played by sociology in the spread of food loss awareness.

- To reveal the extent of Apps designers and developers' awareness of food loss problematic.
- Monitor the bases and controls that must govern food Apps designers and developers in Arab countries.
- To identify food App ideologies and their relationship with sociology, especially food loss problematic.

### **Research Methodology:**

The current research methodology is a descriptive analytical meta-study based on description, critique and the study of the data related to the content and the descriptive analytical method by using content analysis tool.

The current research attempted to analyse the content by download five iOS food delivery apps, which are (Talabat, Macdonald's Egypt, KFC Egypt, MAF Carrefour and InstaShop), that directly measure the awareness of applications' designers about sociology and food loss problematic. That leads to achieve research objectives by recognizing the role of sociology in creating the ideology of food applications' designers and developers, and if they have the proper knowledge about how to use sociology to stop food loss.

The sample of the study was chosen deliberately through the selection of food Apps in Egypt that downloaded from millions of customers from 2020 to 2022, where the researcher wanted to know awareness and education of apps designers and developers and how they reflect their education in the apps through their support to increase food loss.

The current research focuses on the analysis of App content in Arabic societies as a geographical area, represented in Egypt.

According to "ASOTools" Egypt includes more than 20 million customers using food apps, where the study sample consisted of 5 apps (Talabat, Macdonald's Egypt, KFC Egypt, MAF Carrefour, InstaShop) that include the terms of the research objectives.

The research will use "ASOTools" as a tool to collect data to analysis; it is a professional application optimization and data

**The role of Sociology in improving the education of food applications' designers and developers to reduce food loss "Applied analytical study on some Arab Food delivery applications"**

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analysis platform, which provides accurate downloads and revenue estimates, Visiting site, Mobile Action. Enhance the discoverability of innovative mobile applications. The platform gives us deep data to many apps.

The researcher will download the five selected apps from apple iOS App Store that iPhone provided to their customers for free.

**Research sample:** According to "ASOTools" there are more than 300 Apps were released last three years in Egypt that downloaded by more than 3 million customers, the research found that 20 Food Apps downloaded from 15.864.000 customers from 2020 till 2022.

**The research Apps' samples description:**

**1. Talabat App:**

Image (1)

Talabat App on ASOTools platform



Talabat is one of the biggest on-line apps for food delivery in Arab countries that delivers food from many restaurants. It offers food delivery services in Arab countries. The customer will be able to choose among different kinds of cuisines from thousands of restaurants nearby his/her location. Image (1) describes the app details that shows on ASOTools platform.

## 2. McDonald's App:

Image (2)

McDonald's App on ASOTools platform



McDonalds is one of the famous fast-food restaurants which provides a downloaded app for the customers to enjoy the McDonald's experience. By using it, they got a Daily offers and discounts, Exclusive rewards and surprises, Order food easily, Games and competitions with prizes and provide Locations and addresses of all branches. This app provides products' nutritional information for its customers. Image (2) describes the app details that shows on ASOTools platform

## 3. KFC App:

Image (3)

KFC App on ASOTools platform



KFC (Kentucky Fried Chicken) is one of the biggest fast-food restaurants that provides an app for its customers to have a look for Irresistible Offers, order online and choose from many meals provided through a full online menu. Image (3) describes the app details that shows on ASOTools platform.

**The role of Sociology in improving the education of food applications' designers and developers to reduce food loss "Applied analytical study on some Arab Food delivery applications"**

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**4. Instashop App:**

Image (4)

Instashop App on ASOTools platform



Instashop is a very famous app for home delivery connected to grocery markets, pharmacies, restaurants, and different classes of shops. Image (4) describes the app details that shows on ASOTools platform

**5. MAF Carrefour App:**

Image (5)

MAF Carrefour App on ASOTools platform



Carrefour is a hyper market permits its customers to browse and search by using their phone among a wide range of products, like grocery, food, electronics, smartphones and more. App provides the latest deals and offers of what is new. Image (5) describes the app details that shows on ASOTools platform.

**Research Discussion:**

The research relied on analysing the content of the five applications. The results will be discussed in the framework of the following objectives:

**Dr. Nehal Ahmed Mahmoud El Defrawy**

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- To reveal the extent of Apps designers and developers' awareness of food loss problematic.
- Monitor the bases and controls that must govern food Apps designers and developers in Arab countries.
- To identify food App ideologies and their relationship with sociology, especially food loss problematic.

The research found that apps downloaded numbers reach is 1.574.000 customers in the last three years from 2020 till 2022. As shown in table number (1), the research found that 199.000 customers downloaded Talabat app, 1.200.000 customers downloaded McDonalds app, 23.000 customers downloaded KFS app, 62.000 customers downloaded Instashop app, and 90.000 customers downloaded Carrefour app

<b>App Name</b>	<b>Downloaded number</b>
Talabat	199.000
McDonalds	1.200.000
KFC	23.000
Instashop	62.000
Carrefour	90.000
<b>Total</b>	<b>1.574.000</b>

The researcher had set ten aspects to be monitored in the five apps.

Table (2) shows the presence of aspects in Apps, "Yes" means that app provided it and "No" means that app did not provide it.

<b>App Name</b>	<b>Talabat</b>	<b>McDonald's</b>	<b>KFC</b>	<b>Instashop</b>	<b>Carrefour</b>
1. The app requests customer data to express how many people will eat the meal.	NO	NO	NO	NO	NO

**The role of Sociology in improving the education of food applications' designers and developers to reduce food loss "Applied analytical study on some Arab Food delivery applications"**

<b>Table (2)</b>					
<b>Aspects presence in Apps (Yes or No)</b>					
<b>App Name</b>	<b>Talabat</b>	<b>McDonald's</b>	<b>KFC</b>	<b>Instashop</b>	<b>Carrefour</b>
2. The app provides data about the calories of meals.	NO	YES	NO	NO	NO
3. The app provides products' nutritional information.	NO	YES	NO	NO	NO
4. The application requests data to express the Body mass index (BMI) of customers.	NO	NO	NO	NO	NO
5. The app provides information related to reducing food loss.	NO	NO	NO	NO	NO
6. The app provides information about good eating behaviours.	NO	NO	NO	NO	NO
7. On September 29, the app announces about International Food Loss	NO	NO	NO	NO	NO

<b>App Name</b>	<b>Talabat</b>	<b>McDonald's</b>	<b>KFC</b>	<b>Instashop</b>	<b>Carrefour</b>
and Waste Awareness Day.					
8. The app encouraging people only to buy what they need.	NO	NO	NO	NO	NO
9. The app provides different food cuisines.	YES	YES	YES	YES	YES
10. The app asks the customer to donate leftovers.	NO	NO	NO	NO	NO

The research was interested in identifying the role of sociology in educating applications' developers and designers to stop food waste. Where the researcher monitored through the five applications that the apps' designers and developers didn't have any knowledge about sociology role to stop food loss. According to table (1), no apps provide information related to reducing food loss or any information about good eating behaviours.

Sociology of food is the study of food relating to the history, the progression, and the future development of society. This includes production, preparation, consumption, distribution, conflict, medical application, ritual, spiritual, ethical, and cultural applications, environmental and labor problems.

To reveal the extent of apps designers and developers' awareness of food loss problematic according to table (1) the research monitoring that all apps provide different food cuisines, that increase the curiosity of people to try different kinds of food from different cultures and that will be encouraging people to buy what they didn't need.

**The role of Sociology in improving the education of food applications' designers and developers to reduce food loss "Applied analytical study on some Arab Food delivery applications"**

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The research was interested in monitoring the bases and controls that must govern food apps designers and developers in Arab countries. According to table (1), no apps requiring data from the customer about how many people will eat the meal. Also, didn't provide data about the calories of meals or products' nutritional information and didn't request any data to express the Body mass index (BMI) of customers. That means that there are no bases and controls govern food apps designers and developers in Arab countries only McDonald's provided poor information about meal calories.

To identify food app ideologies and their relationship with sociology, especially food loss problematic according to table (1) all apps didn't provide information related to reducing food loss or information about good eating behaviours, as well apps didn't announce on September 29 about International Food Loss and Waste Awareness Day, plus that all apps didn't provide for the customers donate leftovers facilities.

**Research Results:**

1. The education of food applications' developers didn't add any value to stop food loss.
2. The weakness of app designers and developers' education in sociology and the food loss problematic.
3. Food applications didn't include sharp information about food amount or nutrition guide, or any valuable info to support saving food.
4. The weakness of app designers and developers' awareness of the food loss problematic.
5. There are no significant differences between the five apps.
6. There are no controls governing the apps designers and developers in Arab countries.
7. There is not clear ideology provided in the apps that reflect any relationship with sociology and food loss problematic.

8. Provided many food cuisines encouraging people to try what they didn't need just to try different cuisines to know more about other cultures.
9. The apps didn't provide donate leftovers.
10. The apps didn't announce info to increase Food Loss and Waste Awareness.

**Research Conclusion:**

According to LinkedIn randomly search by job title and food application name, the researcher chooses five computer and graphic departments at four famous universities in Cairo Egypt that App designers and developers graduated from; and the researcher found that all curriculums didn't include sociology as a subject as list:

- The American university in Cairo/ Bachelor of Arts in Graphic Design Curriculums didn't include Sociology  
Source: [https://catalog.aucegypt.edu/preview\\_program.php?catoid=20&poid=3062](https://catalog.aucegypt.edu/preview_program.php?catoid=20&poid=3062)
- The American university in Cairo/ Bachelor of Science in Computer Science Curriculums didn't include Sociology  
Source: [https://catalog.aucegypt.edu/preview\\_program.php?catoid=20&poid=2943](https://catalog.aucegypt.edu/preview_program.php?catoid=20&poid=2943)
- Ain Shams University in Cairo/ Faculty of science Curriculums didn't include Sociology  
Source: <https://asu2learn.asu.edu.eg/science/course/index.php?categoryid=14>
- Coventry University in Cairo/ BA Graphic Design Curriculums didn't include Sociology  
Source: <https://tkh.edu.eg/programmes/coventry-graphic-design/>
- Cairo university/ Communication and Computer Engineering Program (CCE) Curriculums didn't include Sociology  
Source: <https://eng.cu.edu.eg/wp-content/uploads/creditusser/2015/5-CCE.pdf>

People who studying sociology or having sociology as a part of their education will have knowledge and awareness about societies problematic, like food loss and have good knowledge about the different theories and ideologies that support societies to decrease it.

**The role of Sociology in improving the education of food applications' designers and developers to reduce food loss "Applied analytical study on some Arab Food delivery applications"**

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According to research discussion, results, Table (2) ten aspects, and above listed universities the researcher set recommendations to improve the education of designers and developers of food applications, to gain more knowledge about sociology and to increase their awareness of food loss problematic.

1. The importance of sociology in apps designers and developers' education.
2. Raising app designers and developers' awareness of the relationship between sociology and stop food loss.
3. Spread support of teaching sociology in the face of stop loss problematic
4. Spreading every positive act that has been done in societies to confront food waste.
5. Spreading the efforts of the Arab countries to stop food loss.
6. Encouraging apps' designers and developers to provide data to express how many people will eat the meal
7. Encouraging apps' designers and developers to provide data about the calories of meals.
8. Encouraging apps' designers and developersto provide products' nutritional information.
9. Request data to express the Body mass index (BMI) of the customers.
10. Provide information related to reducing food loss in apps home page.
11. Provide information about good eating behaviours as notifications while using food apps.
12. Announcements about International Food Loss and Waste Awareness Day.
13. Provide donate leftovers ways for food apps customers.

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**The role of Sociology in improving the education of food applications' designers and developers to reduce food loss "Applied analytical study on some Arab Food delivery applications"**

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